

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-27 are pending in this application. Claims 1, 13-15, 26, and 27 are amended by the present amendment, without adding new matter.

In the outstanding Office Action, Claim 1, 13-15, 26, and 27 were rejected under 35 U.S.C. § 101; Claims 1-9, 11-23, and 25-27 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,574,595 to Mitchell et al. (herein “Mitchell”); and Claims 10 and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over Mitchell in view of U.S. Publication 2002/0178004 to Chang et al. (herein “Chang”).

Regarding the rejection under 35 U.S.C. § 101, Claim 27 is amended to recite “a computer storage medium.” Further, Applicants respectfully submit the amendment finds support in the specification as originally filed at least at page 32, lines 6-10, which describes CPU usage during a merge operation. In addition, Applicants respectfully submit that one of skill in the art would know that performing a merge operation using a CPU requires a computer storage medium. Moreover, Applicants note that the phrase “computer storage medium” should be interpreted to exclude non-statutory carrier waves. Applicants respectfully submit that such a computer storage medium is patentable subject matter within the scope of 35 U.S.C. § 101. Thus, it is respectfully requested that rejection be withdrawn.

Applicants respectfully traverse the rejection of Claims 1, 13-15, 26, and 27 under 35 U.S.C. § 101, and respectfully traverse the assertion in the Office Action that the claims do not accomplish “useful, concrete and tangible results” as required by *State Street*, because, according to the Office Action, the claims only refer to delaying “a merging of text unit concatenation and not the actual tangible transcription of the input speech as a result of the

speech recognition.”<sup>1</sup> Applicants respectfully submit that Claim 1 is directed to a decoder, Claim 13 is directed to an automatic speech recognition system, and Claim 14 is directed to voice activated control navigation system, each of which are more properly categorized as machines and not processes, and according to *State Street* a machine is statutory subject matter under § 101. Further, according to *State Street*, a programmed machine that produces a useful, concrete, tangible result is “statutory subject matter even if the useful result is expressed in numbers,” and in this case, the delayed merged text is a useful result expressed in numbers. However, in the interest of compact prosecution, the independent claims are amended to recite a feature related to the actual tangible transcription of the input speech as a result of speech recognition, as suggested in the Office Action. Accordingly, it is respectfully requested the rejection under 35 U.S.C. § 101 be withdrawn.

Further, Applicants respectfully traverse the rejection of Claims 1-9, 11-23, and 25-27 under 35 U.S.C. § 102(e) as anticipated by Mitchell, with respect to the amended independent claims.

Amended Claim 1 is directed to a decoder for an automatic speech recognition system for determining one or more candidate text unit concatenations according to a predetermined criterion and which correspond to a speech segment. The decoder includes, in part, a processor arranged to receive a sequence of feature vectors corresponding to the speech segment. The processor is arranged to map with different likelihood values the feature vectors to sequences of nodes in a decoding network, every sequence representing a concatenation of text units. The processor is also arranged to determine one or more candidate node sequences in the decoding network corresponding to the candidate text unit concatenations by implementing a dynamic programming token passing algorithm in which

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<sup>1</sup> Office Action at page 4, first paragraph.

each token corresponds to a node and is associated with a number of text unit concatenations and likelihood values for these concatenations.

In addition, the independent claims are amended to recite that a merging of the text unit concatenations is delayed until an end of the speech segment based on the likelihood values. Independent Claims 13-15, 26, and 27 include similar features directed to different classes and scopes of invention.

Applicants respectfully submit that Mitchell fails to disclose each of the features of independent Claims 1, 13-15, 26, and 27. For example, it is respectfully submitted that Mitchell fails to teach or suggest a token passing algorithm in which each token is associated with a number of text unit concatenations and likelihood values for these concatenations, where merging of the text unit concatenations is delayed until an end of the speech segment based on the likelihood values, as suggested in the Office Action.<sup>2</sup>

Mitchell describes a method and apparatus for automatic speech recognition that includes a “barge-in” step 232 for rapidly stopping a prompt to improve recognition and reduce speaker confusion.<sup>3</sup> According to Mitchell, the automatic speech recognition is performed on a sub-word level to declare a “barge-in” when a maximum number of phonemes is reached.<sup>4</sup> In particular, Mitchell indicates that in step 208, likelihood scores are compiled, and in step 210, a sub-word network of possible sub-word sequences are built, before moving on to a next phoneme.<sup>5</sup> In other words, Mitchell calculates a sub-word sequence (e.g., merged text units) on a frame by frame basis and thus there is no disclosure or suggestion of an identifier which allows the merge operation of text units to be delayed until an end of a speech segment based on a likelihood value.

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<sup>2</sup> Office Action at page 2, lines 9-12.

<sup>3</sup> Mitchell at Abstract and FIG. 2B.

<sup>4</sup> Mitchell at column 1, lines 60-64.

<sup>5</sup> Mitchell at column 5, lines 54-61, and column 6, lines 51-59.

Accordingly, it is respectfully submitted that Mitchell fails to teach or suggest each of the features of independent Claims 1, 13-15, 26, and 27. Thus, it is respectfully submitted that independent Claims 1, 13-15, 26, and 27, and claims depending therefrom, patentably define over Mitchell.

Accordingly, it is respectfully requested the rejection of Claims 1-9, 11-13, 15-23, and 25-27 under 35 U.S.C. § 102(e) be withdrawn.

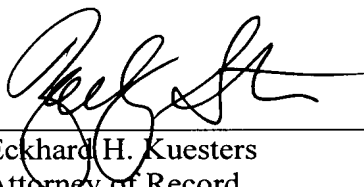
In addition, Applicants respectfully traverse the rejection of Claims 10 and 24 as unpatentable over Mitchell in view of Chang. Claim 10 depends from Claim 1 and Claim 24 depends from Claim 15, and Claims 1 and 15 are believed to patentably define over Mitchell, as discussed above. Further, Applicants respectfully submit that Chang fails to teach or suggest the claimed features lacking in the disclosure of Mitchell. Thus, it is respectfully requested that rejection also be withdrawn.

Accordingly, Applicants respectfully submit that independent Claims 1, 13-15, 26, and 27, and claims depending therefrom, are allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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